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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,584	03/08/2004	Clark R. Baker JR.	TYHC:0149/FLE (P0409R)	1106
52144	7590	11/25/2005	EXAMINER	
FLETCHER YODER (TYCO INTERNATIONAL, LTD.) P.O. BOX 692289 HOUSTON, TX 77269-2289			RAMIREZ, JOHN FERNANDO	
			ART UNIT	PAPER NUMBER
			3737	

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/796,584	Applicant(s) BAKER, CLARK R.	
	Examiner John F. Ramirez	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/8/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>08/08/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-16, and 18-22, are rejected under 35 U.S.C. 102(b) as being anticipated by Diab et al. (US 2003/0036689).

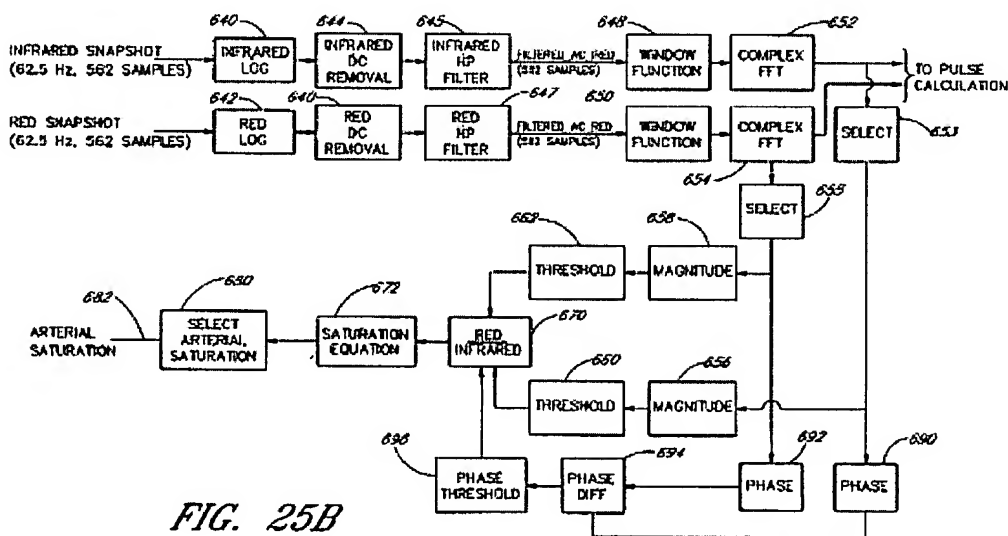
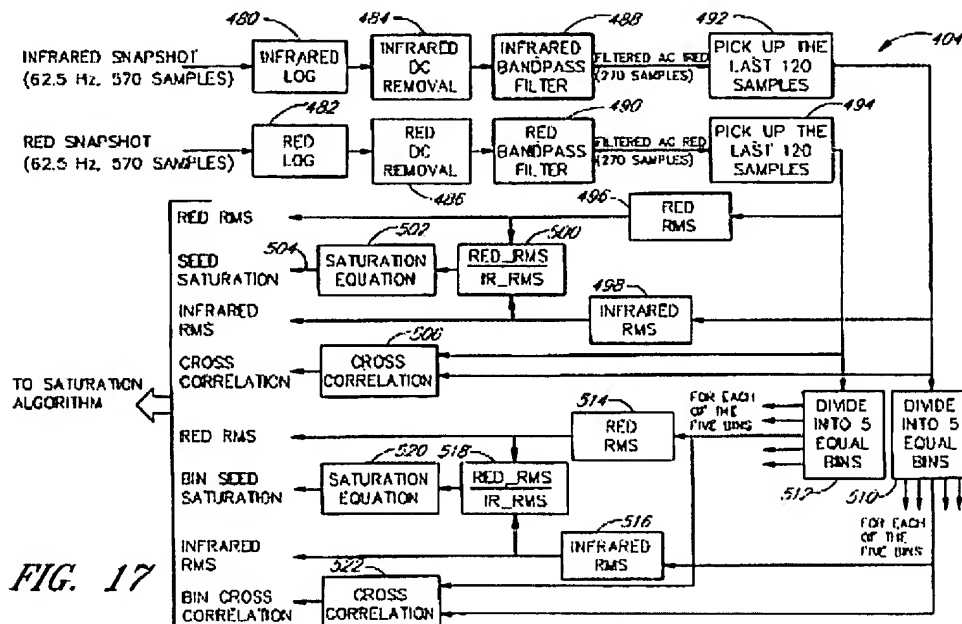


FIG. 25B

With respect to claims 1-4, 7, 8, 13-16, 19 and 20, Diab et al. discloses a method of detecting the presence of mixed venous and arterial blood pulsation in tissue, comprising: receiving first and second electromagnetic radiation signals from a blood

perfused tissue portion corresponding to infrared and red wavelengths of light, (abstract), obtaining a measure of a phase difference between said first and second electromagnetic radiation signals (Figure 25B), comparing said measure with a threshold value to form a comparison; and detecting the presence or absence of venous pulsation using said comparison (col. 31, paragraph [0387] – col. 32, paragraph [0395]), filtering said first and second electromagnetic radiation signals before said obtaining said measure, to pass portions of said first and second electromagnetic radiation signals having frequencies at or near the pulse rate or harmonics of the pulse rate of said blood perfused tissue (645, 647, Figure 25B), obtaining a measure of a phase difference between said first and second electromagnetic radiation signals comprises obtaining a measure of a persistent phase difference between said first and second electromagnetic radiation signals (694, Figure 25B), obtaining a measure of a persistent phase difference comprises integrating said measure of a phase difference over a time period (col. 10, paragraph [0133]), obtaining a measure of a phase difference comprises a frequency domain analysis and subtracting the phases of said first and second electromagnetic radiation signals at a frequency (col. 32, paragraph [0402]), subtracting the phases of said first and second electromagnetic radiation signals comprises taking the complex conjugate of said first and second electromagnetic radiation signals, and dividing said complex conjugate by the product of the magnitudes of said first and second electromagnetic radiation signals (652, 654, 656, 658, Figure 25B).



With respect to claims 6, 9-12, 18, 21 and 22, Diab et al. discloses a method of obtaining a measure of a phase difference comprises analyzing a cross-correlation function of said first and second electromagnetic radiation signals (506, 522, Figure 17), as a function of a delay interval between them (110, Figure 8), obtaining a measure of a phase difference comprises obtaining said measure of a phase difference at or near a fundamental pulse rate of said blood perfused tissue (col. 32, paragraph [0400]), obtaining said measure of a phase difference at or near a harmonic of a pulse rate of said blood perfused tissue (col. 26, paragraph [0329]), obtaining a measure of a phase difference comprises obtaining said measure of a phase difference at or near a fundamental or at or near a harmonic of a pulse rate of said blood perfused tissue (col. 31, paragraph [0385]), providing a notification of the presence of venous pulsation (col. 3, paragraphs [0022] and [0023]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diab et al. in view of Chin et al. (US 6,018,673).

Diab et al., teaches all the limitations of the claimed subject matter except for mentioning specifically the step of obtaining a measure of a phase difference comprises obtaining a measure of the openness of an ellipse on a Lissajous plot formed by comparing the first electromagnetic radiation signal against the second electromagnetic radiation signal.

However, the step of (1) obtaining a measure of a phase difference comprises obtaining a measure of the openness of an ellipse on a Lissajous plot formed by comparing the first electromagnetic radiation signal against the second electromagnetic radiation signal are considered conventional in the art as evidenced by the teachings of Chin et al. (US 6,018,673).

The Chin et al. patent shows in Figures 1, 2, 8A-8D and 9A-9B, the step of obtaining a measure of a phase difference comprises obtaining a measure of the openness of an ellipse on a Lissajous plot formed by comparing the first electromagnetic radiation signal against the second electromagnetic radiation signal.

Based on the above observations, for a person of ordinary skill in the art, modifying the method disclosed by Diab et al., with the above discussed enhancements would have been considered obvious because such modifications would have improved a method to determine the amount of oxygen in arterial blood, as distinguished from venous blood or the tissue itself.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John F. Ramirez whose telephone number is (571) 272-8685. The examiner can normally be reached on (Mon-Fri) 7:30 - 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JFR
11/15/05


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